Claims

1. An infrared imaging device comprising

a plurality of thermal resistors arranged one-dimensionally or two-dimensionally, wherein

each of the thermal resistors is composed of a strongly-correlated electron material.

2. The infrared imaging device of Claim 1, wherein

the thermal resistor is a metal oxide having a perovskite structure and including at least one of a rare earth metal and an alkaline earth metal.

3. The infrared imaging device of Claim 1 further comprising

a detecting unit operable to detect an amount of received infrared light using the thermal resistor wherein,

the plurality of thermal resistors and the detecting unit are formed on a common semiconductor substrate.

4. An infrared camera comprising a plurality of thermal resistors arranged one-dimensionally or two-dimensionally, and generating image data by detecting an amount of received infrared light using the thermal resistors, wherein

the thermal resistor is composed of a strongly-correlated electron material.

5. An infrared detector that detects an amount of received infrared light using a thermal resistor, wherein

the thermal resistor is composed of $Pr_{1-x}Ca_xMnO_3$ having

a perovskite structure in which at least one of replacement of a part of Pr with a different a rare earth metal and replacement of a part of Ca with a different alkaline earth metal is performed.

6. An infrared detector that detects an amount of received infrared light using a thermal resistor, wherein

the thermal resistor is composed of $LaTiO_3$ having a perovskite structure in which a part of La is replaced with an alkaline earth metal.

7. An infrared detector that detects an amount of received infrared light using a thermal resistor, wherein

the thermal resistor is composed of $RNiO_3$ having a perovskite structure and including R in which a part of R is replaced with an alkaline earth metal, where R is an yttrium or a rare earth metal.

8. The infrared detector of Claim 7, wherein

R in the $RNiO_3$ is made by compounding two or more elements from among the yttrium and the rare earth metal.

9. The infrared detector Claim 7, wherein

the thermal resistor is composed of $RNiO_3$ in which a part of R is replaced with an alkaline earth metal.

10. An infrared detector comprising:

a thermal resistor composed of a metal oxide having a

perovskite structure;

a magnetic field applying unit operable to apply a magnetic field to the thermal resistor; and

a detecting unit operable to, in a state where the magnetic field is being applied to the thermal resistor by the magnetic field applying unit, detect an amount of received infrared light using the thermal resistor.

11. The infrared detector of Claim 10 further comprising

a changing unit operable to cause the magnetic field applying unit to change an intensity of the magnetic field.

12. An infrared detector that detects an amount of received infrared light using a thermal resistor, wherein

the thermal resistor is composed of a metal oxide having a perovskite structure, and is formed on an insulator having a perovskite structure whose lattice constant differs from a lattice constant of the thermal resistor.

13. An infrared detector comprising:

a thermal resistor composed of a metal oxide having a perovskite structure;

a stress applying unit operable to apply a stress to the thermal resistor; and

a detecting unit operable to, in a state where the stress is being applied to the thermal resistor by the stress applying unit, detect an amount of received infrared light using the thermal resistor.

14. The infrared detector of Claim 13 further comprising

a changing unit operable to cause the stress applying unit to change an intensity of the stress.

15. An infrared detector comprising:

a thermal resistor composed of a metal oxide having a perovskite structure;

an electric field applying unit operable to apply an electric field to the thermal resistor; and

a detecting unit operable to, in a state where the electric field is being applied to the thermal resistor by the electric field applying unit, detect an amount of received infrared light using the thermal resistor.

16. The infrared detector of Claim 15 further comprising

a changing unit operable to cause the electric field applying unit to change an intensity of the electric field.

17. An infrared detector that detects an amount of received infrared light using a thermal resistor, wherein

the thermal resistor is composed of $Pr_{1-x}Ca_xMnO_3$ having a perovskite structure, to which a metal oxide having a perovskite structure is added, the metal oxide including at least one of a rare earth metal excepting Pr and an alkaline earth metal excepting Ca.

18. The infrared detector of Claim 17, wherein

the metal oxide is any of a manganese oxide, a titanium oxide, an aluminum oxide, a gallium oxide, and a cobalt oxide.